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REPORT AND RECOMMENDATION

OF THE

PRESIDENT OF THE

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

TO THE

EXECUTIVE DIRECTORS

ON A

PROPOSED LOAN

IN AN AMOUNT EQUIVALENT TO US$95 MILLION

TO THE

REPUBLIC OF KOREA

FOR A

METROPOLITAN REGION WATER SUPPLY PROJECT

January 14, 1985

CURRENCY EQUIVALENTS
(As of November 1, 1984)

Currency unit	=	Won (W)
Won	=	0.00125
US$1.00	=	800 Won

FISCAL YEAR

January 1 to December 31

WEIGHTS AND MEASURES

meter (m)	=	3.28 feet
kilometer (km)	=	0.62 miles
square kilometer (sq km)	=	0.39 square miles
hectare (ha)	=	10,000 square meter
cubic meter (cu m)	=	264 US gallons
cubic meters per second (cu m/s)	=	22.82 million US gallons per day
Gigawatt hour (GWh)	=	1 million kilowatt hours (kWh)
liter (l)	=	0.26 US gallons
liters per capita per day (lpcd)	=	0.26 gallons per capita per day
milligrams per liter (mg/l)	=	parts per million (ppm)
metric ton (mt)	=	2,205 lb or 1 cubic meter of water
metric tons per day (mtpd)	=	2,205 lbs per day or 264 US gallons per day

ABBREVIATIONS AND ACRONYMS

ADB	=	Asian Development Bank
DRP	=	Design Review Panel
EPB	=	Economic Planning Board
ERR	=	Economic Rate of Return
ICB	=	International Competitive Bidding
IMC	=	Inter-Ministerial Committee
ISWACO	=	Industrial Sites and Water Resources Development Corporation
KECC	=	Korea Engineering Consultants Corporation
KEPCO	=	Korea Electric Power Company
MOC	=	Ministry of Construction
MOHA	=	Ministry of Home Affairs
MOHSA	=	Ministry of Health and Social Affairs
OOE	=	Office of the Environment
UNDP	=	United Nations Development Programme
WB	=	Water Bureau

KOREA

METROPOLITAN REGION WATER SUPPLY PROJECT

Loan and Project Summary

Borrower: Republic of Korea

Beneficiary: Industrial Sites and Water Resources Development Corporation (ISWACO).

Amount: $95.0 million equivalent, including the capitalized front-end fee.

Terms: Repayable in 15 years with 3 years of grace, at the standard variable rate. ISWACO would bear the foreign exchange risk.

Project Description: The proposed project would provide 1.3 million metric tons per day (mtpd) of water to 25 municipalities around Seoul City and within the Metropolitan Region. This would improve water service to about 5 million persons and provide the capacity to serve 1.1 million additional persons by 1991.

The project would extract water from the Han river, upstream of Seoul, to be treated in three treatment plants before distribution to the municipalities. The project includes two water intakes, three booster pumping stations, two treatment plants, some 175 km of pipes (1,000 to 2,400 mm in diameter) and 14 km of tunnels, and construction supervision. Studies would be carried out to improve the organization of water and sewerage services in the Metropolitan Region, to establish corporate planning within ISWACO and to set policies for bulk water tariffs at a national level.

On completion of the project, assets and debt service liabilities, plus a service charge of 0.05% p.a., would be transferred to ISWACO.

Risks: There are no special risks in the project. The Government has provided assurances that complementary works necessary to utilize the water produced by the project would be completed before the project is commissioned in 1988

Project Costs:	Local	Foreign	Total
		($ million)	
Civil Works	78.0	30.6	108.6
Materials and Equipment	26.2	46.2	72.4
Land & compensation	9.9	0	9.9
Eng. & Technical assistance	4.5	1.2	5.7
Base cost	118.6	78.0	196.6
Physical contingencies	11.9	7.8	19.7
Price contingencies	18.4	17.4	35.8
Total Project Cost /a	148.9	103.2	252.1
Interest during construction	-	14.0	14.0
Front-end fee	-	0.2	0.2
Total to be Financed	148.9	117.4	266.3
Financing Plan:			
IBRD	-	95.0	95.0
Government equity	148.9	22.4	171.3
Total Financing	148.9	117.4	266.3

Estimated Disbursements: Bank FY	1985	1986	1987	1988	1989	1990
Annual	0.2	10.7	25.0	33.0	25.0	1.1
Cumulative	0.2	10.9	35.9	68.9	93.9	95.9

Rate of Return: 14%

Staff Appraisal Report: No. 5233-KO

Map: IBRD 18420

/a Including duties and taxes estimated at $11.5 million equivalent.

REPORT AND RECOMMENDATION OF THE PRESIDENT
OF THE INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
TO THE EXECUTIVE DIRECTORS ON A PROPOSED LOAN
TO THE REPUBLIC OF KOREA
FOR A METROPOLITAN REGION WATER SUPPLY PROJECT

1. I submit the following report and recommendation on a proposed loan for the Metropolitan Region Water Supply Project, Republic of Korea, for the equivalent of $95 million, including the capitalized front-end fee. The loan would have a term of 15 years, including three years of grace, and would bear interest at the standard variable interest rate.

PART I - THE ECONOMY

2. The latest Economic Report entitled "Korea's Development in a Global Context" was distributed under cover of Sec M84-570 dated June 21, 1984. The following summary is based on this Report. The Country Data Sheets are attached as Annex 1.

3. Past Performance. Twenty years ago, Korea was one of the poorest developing countries, heavily dependent on agriculture, with a weak balance of payments position financed almost entirely through foreign grants. But the ability to sustain a growth rate of 8% p.a. from 1960 onwards raised Korea's per capita income from $80 in 1960 to $1,700 in 1982 (both in current prices), with more than 80% of the population above the poverty line, and enabled her to join the ranks of the semi-industrial nations. During this period, the share of the manufacturing sector in GNP rose from 14% to 29% while the share of agriculture fell from 39% to 17%. Merchandise exports, principally manufactured goods, accounted for almost 41% of GNP as against a mere 4% two decades earlier and the balance of payments position had been considerably strengthened.

4. Rapid industrial growth also brought about a marked shift in the structure of employment. In the early sixties well over half the labor force had been employed in agriculture. By 1982, employment in this sector had fallen to a third, while manufacturing absorbed over 22% of the employed. Heavy migration from the rural areas to the cities combined with deliberate Government policies to improve the agricultural terms of trade and a steady increase in agricultural value added helped to ensure growth in per capita rural incomes more or less in line with the rest of the economy through the 1970s.

5. Adjustment to Oil Crises and Domestic Shocks, 1974-82. Foreign borrowing, an increase in public sector savings, and export diversification resulting from an ambitious industrial policy enabled the country to negotiate the first oil crisis without faltering, and thereafter, to grow by 10% p.a. until 1978. However, the very success of the Korean planners in stimulating the economy generated serious inflationary pressures. Real wages rose at an average annual rate of 18% between 1975-78, well in excess of the growth in productivity, and by 1978 the Consumer Price Index (CPI) was increasing at

over 18% p.a., compared to a rate of 10% in 1977. In addition, the large volume of subsidized credit which was made available to the heavy and chemical industries by the financial system under the Government's direction, brought about an excessive expansion of capacity in subsectors faced with weak demand while the traditional light industries were frequently starved of funds. This trend was in line with the Government's view of Korea's changing comparative advantage, but it created structural imbalances in the manufacturing sector and in conjunction with exchange rate rigidity and a rising price level, dampened export growth in the latter part of the 1970s.

6. The Government announced, in April 1979, a far reaching program of stabilization-cum-restructuring to contain price pressures and revive exports, but it was overtaken by a series of unexpected shocks. The oil price adjustment by OPEC raised Korea's petroleum import bill from about $2.3 billion in 1978 to $6.2 billion in 1980 with the price-induced increase equal to nearly 6% of GNP in 1980. In October 1979, President Park Chung Hee, the chief architect of Korea's "economic miracle" since the mid-sixties, was assassinated. This was followed by a period of the severest political uncertainty and social unrest in twenty years, with the situation returning to normal only after a new Administration under President Chun Doo Hwan was installed in September 1980. On top of these developments, unfavorable weather reduced agricultural output by about 22% in 1980, or over 4% of GNP, and a 20% decline in investment led to a worsening of deflationary pressures that outweighs the 10% growth of export volume. As a result, GNP fell by 6.2% in 1980, unemployment increased to 5.2% from 3.2% in 1978 and the higher costs of fuel, raw materials and foodstuffs pushed up consumer prices by 29%.

7. To stabilize the economy and promote external adjustment, the Government attempted, with some success, to restrain wages. It also adopted a system of managed float, as a consequence of which the effective exchange rate was cut by 30% in 1980. Improved competitiveness and weak domestic demand allowed export volume to increase by 10% in 1980 and a further 17% in 1981. This sizeable expansion in trade brought about a narrowing of the current account deficit from $5.3 billion in 1980 (9.4% of GNP) to $4.6 billion (7.4% of GNP) in 1981. Meanwhile a 0.3% cut in real wages following on the heels of a 5% drop in the previous year, together with some levelling off of import prices, led to an easing of inflationary pressures. These favorable developments continued through 1982, a year which saw inflation declining to 7.3% and the payments deficit to 3.9% of GNP, largely because of movements in the terms of trade favoring Korea, modest success on the wages front and rather more conservative fiscal and monetary policies.

8. While these changes in key macroeconomic indicators offered heartening evidence of progress with adjustment, growth in 1982 (5.3%) was appreciably below expectations, as consumer and investment demand increased only moderately, and the 6% rise in exports came largely from a surge in sales of ships. Hence, in the first half of 1983 the Government moved to stimulate domestic economic activity by concentrating a larger proportion of the total budgeted public expenditure in the earlier part of the year. This served to stimulate construction activities in the public sector, but the expectations generated by the Government's counter cyclical action together with the prospects of a revival in international demand, also triggered a boom in the

private housing and real estate markets, and in the industries supplying inputs for construction activities. The recovery in export demand for electronics, machinery and transport subsectors from about the middle of 1983 helped to sustain the tempo of economic activity through the last two quarters with the result that GNP grew by over 9%.

9. Medium-Term Prospects. As was the case during the 1970s, Korea's rate of growth during the 1980s will be determined largely by the performance of exports on the one hand and savings on the other. The revised version of the Fifth Plan aims for a growth rate target of 7.5% which is to be achieved via an export growth rate of 10% and a national savings rate of 29%. All this is to be accomplished in an environment of stable prices and equilibrium in the balance of payments. The proposed targets are ambitious and the self-imposed constraints are tight. Hence, careful macroeconomic management will be required over the next few years.

10. Export performance over the last eighteen months has been very encouraging. Merchandise exports grew by 12% during 1983 and present indications are that this rate has been surpassed in the first half of 1984. However, this performance has been tied largely to the U.S. economic recovery and the continued strength of the U.S. dollar. Exports to the U.S. grew by 32.1% in 1983 while exports to the European countries rose only 6.9% and to Japan only 0.5%. Therefore, if the U.S. recovery falters, or if protectionist sentiment increases, it is very likely that Korea's exports will grow more slowly and the pace of GNP growth slacken. Korea is aiming to soften the impact of such eventualities by investing in domestic R&D and in upgrading the skills of its labor force so as to be able to diversify its export base.

11. National savings are being promoted partly through a process of financial liberalization which raised real rates of interest for depositors of up to 5% in 1983, partly through budget surpluses arising from restrained government expenditure and partly through measures to increase efficiency in public sector activities. The savings rate stood at 24.4% in 1983, up from a recent low of 21.9% in 1980. However, a savings rate of 29% and a level of fixed investment of about 31% will be needed if growth is to be maintained at 7.5% without pressure on the balance of payments. On the basis of past aggregate savings performance, it is likely that the Koreans will attain their savings target. However, the process may be more difficult in the future than it has been in the past. There has been a marked shift up in the demand for consumer durables in recent years. While the burden of increasing savings will largely be met by private savings as a result of rising income and profit levels, Government is also taking action to raise further the contribution of the public sector to savings.

12. Korea has adopted price stability as a major objective in recent years and has sought it through restrictive fiscal and monetary policies. Money supply growth has been restricted to around 12% over 1983 and all indications are that the restraint will continue over the next few years. So far, the measures adopted seem to have been successful. Consumer prices rose by only 3.4% in 1983 as compared to 7.2% in 1982 and 18% in 1979. Preliminary results suggest that 1984 will be a year of low inflation as well. Korea's ability to maintain a low rate of inflation in future years will depend upon

its ability to sustain sound fiscal and monetary policies and to keep wages from outpacing the growth of productivity.

13. External Resource Balance. While total debt is high ($40.4 billion in 1983, 54% of GNP), the debt service ratio, including interest on short-term debt, remains a manageable 20%. The share of short-term maturities in total debt is, however, high (at 35%), and is a cause for concern. This aspect of its debt and the continuing uncertainty in international financial markets, which has led to high and volatile interest rates, has persuaded the Koreans to hold their new foreign borrowing at about $6 billion per annum through 1986 and to seek balance of payments current account equilibrium by then. Our assessment is that this level of borrowing is reasonable, and that while a significant proportion of official assistance should be continued, Korea is likely to move increasingly towards reliance on private flows to meet external capital requirements. This assessment was endorsed recently by the Consultative Group for Korea which met on July 16, 1984 in Seoul. At that meeting, the Consultative Group, recognizing the rapidly evolving character of Korea's economy and the trends in external assistance, concluded that its role as a forum for aid coordination and enhanced mobilization of external capital is now being fulfilled by Government. Accordingly, it was agreed that the Group should be formally dissolved. Nevertheless, the Government explicitly indicated its need and its intention to continue with a substantial program of borrowing from the Bank and its wish to continue with an active economic dialogue that would provide a vehicle for continued advice on matters of economic policy.

PART II - BANK GROUP OPERATIONS

14. As of September 30, 1984, Korea had received 73 Bank loans (including one Third Window Loan) and 8 IDA Credits, totalling $5,170.88 million in loans and $115.58 million in credits (taking into account cancellations and the refinancing of one IDA Credit in a subsequent Bank loan). As of that date, $1,261.23 million remained undisbursed on effective loans, mostly from commitments in the past two years. Annex II contains a list of outstanding Bank loans, IDA Credits, and IFC Investments as of September 30, 1984. Progress on project implementation is generally satisfactory. Although implementation delays had occurred in several projects - mainly irrigation, highways and population - due primarily to shortfalls in Government budgetary contributions resulting from cost overruns during a period of high domestic inflation, they have been addressed and resolved. The Government has taken measures to increase local funding of Bank-financed projects. However, as the Government's budgetary situation continues to be tight, the status and plans for counterpart contributions will remain an integral part of country implementation reviews held jointly with the Government. Nevertheless, despite the recent delays, Korea's disbursement rate remains the highest among major Bank borrowers in East Asia.

15. The current pipeline of projects in the lending program for Korea reflects an evolution in the Bank's strategy from lending for discrete

projects concerned with micro-institutional issues increasingly to making sector loans which are aimed at addressing broad-based policy and institutional issues. This gradual change in the Bank's lending approach, made possible by the relatively sophisticated Korean institutions, is working well. Sector loans have already been made for Highways, Education and Industrial Finance and others are under preparation. The Bank has also made two Structural Adjustment Loans (SALs), which complement this approach by concentrating on issues that have macro and multi-sectoral impact.

16. Bank lending for the industrial sector is aimed at helping improve Korea's trade and industrial incentives policies, at improving the performance of the financial system and at developing the technological capabilities of Korean enterprises. So far trade and incentives issues have been addressed through two SALs. Issues pertaining to the strengthening of the financial system are being addressed under the Bank's lending for industrial finance. For example, the Industrial Finance project approved by the Board in June 1983 supports the Government's ongoing program of financial sector reform. The Bank's technology enhancement objectives are being pursued through two projects approved in 1982, one for the Korea Technology Development Corporation (KTDC) which finances research, development and engineering and the other for the machinery industries which is designed to provide financial and technical assistance to raise the productivity of small and medium machinery firms. Future lending planned for industry in Korea would include continued support for the financial sector reform, for KTDC and for the small and medium-industry subsector which is expected to play an important role in the growth of the skill-intensive industries which are crucial to the next stage of development of Korean industry.

17. Future Bank lending for agriculture is expected to be limited reflecting the completion of major infrastructure works. A planned fourth credit loan would address a number of policy and institutional issues related to Korean agriculture which have been defined in a sector survey. This would complement public finance issues related to farm subsidies and the restructuring of agro-industries that were included in the second SAL.

18. The Bank has played a major role in assisting the Government to modernize and expand the transport system through lending for the railroad, highway construction and improvement, and port expansion. The Highway Sector loan approved in March 1984 as well as future operations would address sectoral and subsectoral issues such as improving the integration of investment planning, energy conservation and transport efficiency related to regulation and road user charges. Those transport issues which involve macroeconomic policies affecting other sectors of the economy, such as relative fuel prices, are being handled within the context of the second SAL.

19. The Bank Group has been involved in helping to meet the requirements for skilled technical manpower, a precondition of up-market industrial diversification. The Bank's first sector loan for education, approved in 1980, was aimed at improving engineering and management education and technician training. A second sector loan, approved in May 1984, will support measures designed to improve qualitative aspects of secondary and higher level science and technology education.

20. The Bank's recent lending in the urban sector involves support for three regional development projects, two low-income housing projects and two water supply projects. The Bank is assisting Korea to increase the availability of basic services such as housing, water supply under the proposed project, and transportation in the cities. New projects in urban transport, local government finance and water supply are under preparation. Continuation of the policy improvement and institution-building efforts initiated under ongoing projects is planned by moving gradually to a sector approach.

PART III - WATER SUPPLY AND SANITATION SECTOR

21. Country Background. Korea's population in 1983 was 40 million. Its population density of almost 400 persons/sq km is one of the highest in the world; it is also one of the most urbanized of the developing countries. The overall population growth rate has decreased from 3% in 1960 to about 1.5% at present. The urban population in the 187 largest municipalities, which represents 60% of the total, has been increasing by 5% p.a. or about three times the estimated growth rate of the total population. By the end of the century, the population living in municipalities of more than 50,000 inhabitants is expected to include about 80% of the total population. This rapid urbanization, equivalent to doubling the urban population every 14 years, has stretched all urban services, especially water supply. Coupled with accelerated industrial growth and the relatively low priority given to the sector earlier, this has resulted in a decline in the quality of the environment and water shortages with rationing in many cities. Since the 1970s, the Government has given increased priority to social services, which has resulted in significant improvements in the water supply and sanitation sectors and contributed to improvements in public health. Waterborne diseases have declined steadily since 1971. The crude death rate declined from 13 to 7 per thousand persons between 1960-81, while life expectancy increased from 53 to 66 years in this period.

22. Sector Organization. There is no single agency in charge of overall planning and programming of the sector. At the central Government level, four Ministries are directly involved in the sector with some overlapping responsibilities . The Ministry of Construction (MOC), the main agency for the sector, through its Water Resources and Urban Planning Bureaus, is responsible for the planning, design and construction of major water and sewerage works and for collecting hydrological data, issuing licenses for abstraction of water from the major rivers and planning multipurpose dams. The Industrial Sites and Water Resources Development Corporation (ISWACO), a semi-autonomous public corporation under MOC, is responsible for the operation of bulk water systems serving groups of municipalities and for the development of multipurpose dams. The Ministry of Home Affairs (MOHA), through its Local Finance Bureau, oversees the operation of municipal Water Bureaus (WBs), including the approval of bonds, loans, tariffs and the expansion of distribution and storage facilities. The WBs are semi-autonomous organizations, responsible for the design, construction and operation of water works under the municipal governments. They maintain separate budgets and accounts. The Ministry of Health and Social Affairs (MOHSA) is responsible for setting standards and

quality control of drinking water and for implementing rural water supply programs. The Office of the Environment (OOE), under MOHSA, sets standards for pollution control and regulates and coordinates pollution control activities. The OOE also has to approve, under powers vested in it by the Environmental Preservation Law, projects which have an important impact on the environment. Finally, the Economic Planning Board (EPB) sets guidelines for tariff increases through its Price Policy Bureau and allocates counterpart funds for MOC's foreign funded projects.

23. Sector Financing and Tariffs. Investments in production and distribution of bulk water supplies to municipalities under regional arrangements are financed from MOC budgets and foreign loans. Such projects after completion are handed over to ISWACO for operation and maintenance and ISWACO also assumes the corresponding debt service. ISWACO bulk water tariffs are approved by MOC and EPB and are the same country-wide. About 25-40% of the investments by municipal WBs are financed by funds budgeted by MOC, and provided to the WBs as loans, at commercial rates, through the Korea Development Bank. The balance of investment funds required is provided by the WB's internal generation (15-35%), by sales of municipal bonds (20-40%), and foreign loans. MOHA approves water tariffs set by the municipalities, which in general cover the costs of operation, debt service and some contribution to capital investment. EPB provides guidelines for maximum annual tariff increases which reflect macroeconomic policies. In the rural sector, a successful rural water supply program, scheduled for completion in 1986, is being implemented with the provincial governments, the villages and MOHSA each financing one third of the costs. Sewerage is financed from municipal revenues and Government and foreign loans. Sewerage tariffs are presently levied in the three largest cities with all cities scheduled to start levying sewerage tariffs, varying from 20-50% of water tariffs, from 1985.

24. Service Levels.. About 55% of Korea's population was served by piped water in 1980, compared with 33% in 1970 and 17% in 1960. Service levels are better in larger cities, where high population densities and polluted aquifers leave no alternative to publicly supplied water. However, many municipalities suffer from restricted supply, water rationing and frequent low pressure. The quality of treated water is uneven. Water produced by municipal systems averages about 260 liters per capita per day (lpcd), of which about half is for industrial, commercial and government consumption. In an effort to reduce water losses, many municipalities are now implementing leak detection and control programs, supported through two ongoing Bank-financed projects (para. 29), including rehabilitation of older distribution networks.

25. Only 8% of the population are connected to sewerage systems with sewage treatment. The rest use septic tanks and night soil collection systems. Most of the wastewater from residential and industrial premises is discharged untreated or partially treated into street drains. This, combined with high leakage and the possibility of infiltration, exposes distribution systems to the risk of contamination. Increased emphasis is now being given to sewerage and waste disposal (paras. 26 and 52) which is resulting in some improvements. Seoul and Busan, the two largest cities, and several other municipalities have established combined sewerage systems and night soil treatment plants serving about one third of their populations. The OOE and

the municipalities are also enforcing pollution control measures on industry and commerce in an effort to improve the quality of receiving waters and to clean up the environment.

26. Sector Development. Sector investment in 1983 prices increased from $218 million in the Third Plan (1972-76), to $530 million in the Fourth Plan (1977-81) and is forecast to reach $1,442 million for the Fifth Plan (1982-86), with about half being Government expenditures. Government objectives during the Fifth Plan include preservation of water quality, replacement of obsolete equipment, and expansion and construction of new sewerage and water supply systems and treatment plants. The target for 1986 is to increase the population served by piped water from 55% to 70%. Given the high rate of urban population growth, maintaining even the present coverage requires substantial investments. The Fifth Plan provides for a number of environmental pollution abatement measures including an Environmental Master Plan Study of the Han River Basin (completed in 1984), expansion of combined sewerage systems and the building of night soil and sewage treatment plants in some 100 cities and towns. Government plans to increase the percentage of population served by sewage treatment plants from 8% to 35% and sewage treatment capacity from 0.5 million metric tons per day (mtpd) to 8 million mtpd during the period 1980-1991.

27. Sectoral Issues and Constraints. The main sectoral issues, on which a dialogue has been established with the Government, are summarized below:

(a) Financial. At present Korea does not have a well-developed system for mobilizing and allocating resources to the sector. Although water supply projects require lengthy construction periods and do not reach their full capacity until several years after commissioning, the investment funds available to most municipalities are short-term bonds, internal cash generation and annually approved government contributions. This results in project investments with relatively short design horizons being favored, while high priority and more cost-effective, but longer-term investments are delayed for many years. This could be improved with the establishment of financial mechanisms that would give Water Bureaus access to longer-term finance. The lack of financial criteria for setting WBs' tariffs and ISWACO's bulk water tariffs also creates uncertainty about their capacity to assume debt service liabilities and finance long-term project investments. Some projects are financed by grants from Government even when they could generate sufficient revenues to service debts. ISWACO's bulk water tariffs for treated and raw water have a national impact and affect many municipalities. Assurances were obtained during negotiations that a country-wide study of the bulk water tariff policy for raw and treated water would be undertaken by ISWACO, in consultation with the Bank, and presented to the Bank for comments not later than June 30, 1986 (Section 2.06 of the draft Project Agreement). This study would be implemented and financed by ISWACO in coordination with EPB and MOC.

(b) Deficient Organization of Inter-urban Areas. The WBs are generally well operated and maintained. However, municipal water systems are independently planned and operated even after growth has resulted in several contiguous municipalities becoming physically integrated. The main problem in this regard is in the Metropolitan Region (para. 32). The Bank has advocated the

establishment of a better organization (for example a Water Authority), for the Metropolitan Region. This would increase service efficiency, eliminate unfairness in the access to water or sewerage services, eliminate duplication of investments and reduce dependence on Government grants. An initiative has already been taken by MOHA which has engaged the Korea Public Administration Research Institute to prepare a feasibility study of the organization of water supply services country-wide, including the Metropolitan Region. This study would review the feasibility of establishing a Water Authority for this Region. After the feasibility study is completed in 1984, it would be submitted to the concerned Ministries and to the Bank for discussion. The reorganization of water and sewerage services is a sensitive political issue, particularly for the largest municipalities in the Region. Quick decisions and changes should not therefore be expected. MOHA would, after consensus had been reached, have to undertake a detailed study to implement the conclusions of the feasibility study for the Metropolitan Region. Terms of reference for these studies have been discussed with the Bank and assurances have been obtained that these studies would be completed and would be made available to the Bank for comments not later than December 31, 1986.

(c) Fragmentation of Responsibilities. The fragmentation of responsibilities among four Ministries has resulted in a lack of coordination in sector planning, leading to a duplication of efforts in certain areas and the neglect of other activities. This also results in difficulties in preparing or financing projects, and in imbalances between the expansion of production capacity and the construction of distribution facilities. An Inter-Ministerial Committee (IMC) was established under Loan 2072-KO to discuss these problems and improve coordination gradually (para. 30). It is expected that the work of IMC will be strengthened after the recent decision to include EPB in its deliberations.

(d) Scarce Water Resources. A major difference between Korea and many other countries is the lack of adequate water sources. Per capita surface water runoff is only about 40% and 12% of the respective values in Japan and the United States. Since two thirds of the annual precipitation of 1,160 mm occurs during the rainy season from July to September, increased water demand requires the construction of multipurpose dams to store water and regional water transmission systems. These regional systems require long transmission pipelines and expensive pumping. The cost of these regional systems is also increasing rapidly due to the shortage of suitable dam sites, increasing land compensation costs, and long transmission pipelines. It is now very important therefore to improve the planning and utilization of water resources, especially for the four largest river basins - Han, Nagdong, Geum and Yongsan - which contain 70% of the industry and urban population of Korea. These plans would include the implementation of water conservation programs in the municipalities, master plans for and controls over the allocation and use of water in the rivers and adequate pricing policies, close to the marginal cost, to discourage water wastage and help curtail water demand.

(e) Independent Water and Sewerage Organizations. Both at the central level in MOC, and at the municipal level, the responsibility for water and sewerage rests with two separate Bureaus. Increasing urban population and density, higher water consumption, and industrialization now require a large

effort to improve sewerage services and reduce pollution. A better integration and planning of the two services has been recommended to the IMC. Specific proposals by MOC and MOHA to achieve this are presently under consideration by Government.

(f) Air and Water Pollution. High population density, increased ownership of vehicles, the use of coal for heating and especially the wastes generated by Korea's rapid industrialization result in a deterioration of air and water quality. The Government enacted the Environmental Preservation Law in 1981 and the OOE and the municipalities are starting countrywide programs for sewage treatment and control of industrial air and water pollution.

28. Bank Objectives and Lending in the Sector. The Bank's objectives in the sector are to: (a) promote adequate and reliable water and sanitation services and improved environmental conditions; (b) ensure that the benefits of water and sanitation reach the poor, by the extension of the coverage for these services and the implementation of affordable tariffs; (c) help strengthen sector institutions and improve their coordination; (d) develop a solid financial basis for the sector, including cost recovery through better pricing policies and access to long-term financing; and (e) optimize and improve the efficiency of the use of water resources. The Bank liaises closely with other international agencies supporting this sector, in particular with ADB (which is financing several sewerage works and some water supply works); OECF (which is financing sewage treatment plants); and UNDP (which is assisting in pollution control programs).

29. Direct Bank involvement with the water supply sector in Korea is very recent. The First Water Supply Project (Loan 2072-KO, approved in 1981), is financing the expansion of the water supply systems in five cities (Daegu, Gwangju, Masan, Changweon and Jinhae). The project is being executed smoothly, and four cities have already completed their works. MOC has, based on information available on manpower in the water sector and on training needs, prepared a training program to be implemented in 1985-86. Additional training programs for the sector will be based on further studies envisaged under the current ADB-financed Small Towns Water Supply Project. The Second Water Supply Project (Loan 2350-KO, approved in October 1983), is aimed at increasing water availability for municipalities in the Nagdong basin and is progressing satisfactorily. Both of these projects have contributed significantly to strengthening sector institutions and are addressing some of the key constraints in the sector development discussed in the previous paragraph. Programs to introduce accrual accounting using microcomputers, and to apply appropriate leakage control technology for WBs are being implemented under Loan 2350-KO. A study for the establishment of an Urban Fund to finance urban development including municipal water supply projects is being prepared under the Jeonju Regional Project (Loan 2388-KO approved in 1984).

30. As part of the sector dialogue and at the request of the Government, the Bank prepared, in late 1983, a paper providing recommendations to improve sector coordination which is being discussed by the IMC established under the First Water Supply Project. This is a complex issue that will take time to resolve. The proposed project would also allow the continuation of this dialogue with Government and the main sector institutions and the gradual implementation of sector reforms.

PART IV - THE PROJECT

31. Project origin and Formulation. The proposed project is an important part of Government plans to upgrade and expand water services. The project was first identified in 1981 during the preparation of the First Water Supply Project (Loan. 2072-KO). The feasibility study was financed by that loan and completed in 1983, recommended the construction of a raw water transmission system with individual municipalities constructing and operating their own treatment facilities. This followed traditional practices adopted for two previous bulk water systems in the Region. The Bank, however, recommended the construction of a mainly treated water system, with only three jointly operated treatment plants, providing water to groups of municipalities because such a system would be more economical to build and operate, and would lay the foundation for development of an integrated regional water system. After extensive discussions, the Government accepted the Bank's recommendations, which now form the basis for the proposed project. The proposed project now excludes Seoul City which is constructing on its own account additional water systems, which would satisfy economically its water demand until the mid-1990's. The Project was appraised in June-July 1984. Negotiations were held in Washington from October 1-4, 1984. The Korean delegation was led by Mr. Choi Myong-Kon, Director, Economic Cooperation Division, Ministry of Finance. The Staff Appraisal Report (No. 5233-KO) is being distributed separately. A supplemental project data sheet, including a time table of key events and a summary of special conditions, is attached as Annex III.

32. Project Area and Demand. The proposed project would serve 25 municipalities in the Metropolitan Region. The population growth in the Region has been high, averaging about 5% p.a. over the last 20 years, or more than twice the country's population growth during this period. Several municipalities included in the project are experiencing rates of growth in excess of 10% p.a. Water shortages, low pressures and rationing are being experienced by most of the project municipalities. Given the population and industrial growth of the Region, these water shortages would continue to increase until the project is completed. The water demand in the 25 municipalities is projected to increase from 0.7 million mtpd in 1983, to 1.2 million mtpd in 1988 and 1.7 million mtpd in 1991. These projections include about 0.3 million mtpd for three new industrial development zones which have priority within the Government's development plans. Average water consumption, presently 173 lpcd, is expected to increase to 230 lpcd by 1996 for the larger cities, and 180 lpcd for smaller municipalities because of industrial and commercial demand, higher standards of living and the increase in the use of water consuming household appliances.

33. Project Objectives. The project is an integrated solution for the water needs of municipalities within the Region which do not have other sources. The objectives of the project are to:

(a) relieve water shortages and expand the water supply to satisfy the residential and industrial needs of 25 municipalities in the Metropolitan Region, thus improving services to 5 million persons and providing bulk water for 1.1 million additional persons by 1991;

(b) establish the basis for an integrated, treated water system;

(c) improve the efficiency of water services in the Metropolitan Region; and

(d) strengthen the organization of ISWACO, and provide a more rational policy and criteria for nationwide tariffs for raw and treated bulk water supply.

Bank involvement in this project has already resulted in the adoption of a more economic and better technical alternative for a major capital investment. The project would lay the physical and institutional basis for developing an integrated metropolitan system. It would also provide a vehicle for a continued dialogue with key Ministries to improve sector coordination and efficiency.

34. Project Description. The proposed project, the third bulk water supply system in the Metropolitan Region, would extract water from the Han River, which would, upon completion in 1985 of the Chungju Dam, have sufficient water to satisfy demand at least up to the year 2000. The proposed project would provide 1.3 million mtpd of water to 25 municipalities around Seoul City and within the Metropolitan Region (Map IBRD 18420). The Project includes the constructing and equipping of:

(a) a main water intake and pumping station for 1,200,000 mtpd at Paldang, water transmission pipelines about 11 km long and 2,200 mm in diameter, and three tunnels 6.5 km long and 3,800 mm in diameter, delivering water to three water systems described in (b) to (d) below;

(b) the Incheon water system serving five municipalities to the west, including a booster pumping station 560,000 mtpd capacity, water transmission pipelines 29 km long and 2,400 mm to 1,650 mm in diameter, and three tunnels 6.5 km long and 3,000 mm in diameter (the treatment plant for this system would be built, owned and operated by these municipalities);

(c) the Seongnam treated water system serving ten municipalities to the south and including a water treatment plant of 425,000 mtpd capacity, a booster pump station, and a treated water transmission pipeline about 48 km long and 1,800 mm to 1,350 mm in diameter;

(d) about 215,000 mtpd raw water supply to three municipalities and the new Banweol development area;

(e) the Euijeongbu treated water system serving six municipalities to the north and including an independent water intake from the Han

River, a water treatment plant of 100,000 mtpd capacity, a booster pumping station; a treated water transmission pipeline about 24 km long and 1,100 mm to 900 mm in diameter and a tunnel 1.0 km long and 2,200 mm in diameter; and

(f) technical assistance for Project construction, design, supervision and management.

During project execution, studies would be carried out to: (a) improve the organization of water and sewerage services in the Metropolitan Region; (b) establish corporate planning within ISWACO; and (c) set policies for bulk water tariffs at a national level

35. Complementary Works. Six project cities, (Incheon, Seongnam, Suweon, Banweol, Bucheon and Gwangmyeong), and the Pyengtaek development area, would use about 80% of the water supplied by the Project. These cities, with consultant support, are preparing Master Plans and staged programs for improvements and expansions of existing distribution systems. Incheon, Bucheon and Gwangmyeong would construct a jointly owned treatment plant with ADB financing. Other beneficiary municipalities in the Region have also prepared feasibility studies to utilize the water supplied by the project. These expansion programs are being coordinated by MOHA and will cost about W 95 billion, financed from internal revenues, bonds and loans. Distribution expansions and treatment plants have been implemented satisfactorily in the previous two bulk water supply systems, with the water capacity provided being fully utilized in less than four years. Assurances were obtained from the Government during loan negotiations that not later than December 31, 1988: (a) Incheon, Bucheon and Gwangmyeong would complete the construction of a jointly owned treatment plant; and (b) all project municipalities coordinated by MOHA, would expand their distribution systems, to use the water supplied by the project (Section 3.06 of the Loan Agreement).

36. Implementation. The project will be implemented by a Project Unit already designated for this purpose under MOC's Seoul Regional Construction and Management Agency and would be coordinated by MOC's Director General, Water Resources Bureau who would also provide liaison with the Bank. MOC has considerable experience in implementing large foreign assisted projects.

37. The project is in an advanced stage of preparation, bidding documents for two of the four major contract packages are complete and the remainder would be completed before June 1985. The project would be implemented between August 1984 and December 1988. The first contract, for which bidding documents were reviewed by the Bank, was awarded in November 1984, following ICB procedures. Land acquisition and compensation are proceeding satisfactorily. The Project Unit, with consultants' support, would be responsible for construction supervision. The bulk water tariff study and ISWACO's financial management study would be financed and implemented by ISWACO through local consultants. The study for implementing the reorganization of water and sewerage services in the Metropolitan Region would be financed and undertaken by MOHA with the assistance of the Korea Public Administration Research Institute. The municipalities, with MOHA support, would implement their

complementary distribution works with the assistance of local consultants. Consultants for construction supervision and and adequate initial staffing for the Project Unit have been mobilized.

38. About 30 man-months of foreign consultants, and about 520 man-month of local consulants' assistance would be provided for construction supervision. MOC has appointed an expert Design Review Panel (DRP) to review designs and advise on technical problems encountered in the project. The panel consists of a water supply design expert and a pipeline engineering expert. The DRP has reviewed the feasibility studies and preliminary designs. Their recommendations have been incorporated in the final designs. ISWACO will participate in the review of final designs and operational arrangements.

39. Project Cost. The cost of the project, including physical and price contingencies, is estimated at $252.1 million of which $103.2 million (or about 41%) is the foreign exchange component. Taxes and duties are estimated at about $11.5 million equivalent. The base cost is expressed in January 1985 prices. The project cost estimates are based on detailed designs MOC's annually updated rates and prices for estimating similar works and bid prices for the first contract award. The studies on Bulk Water Tariffs and the organization of the Metropolitan water supply systems are being financed locally. Physical contingencies have been estimated at 10% of total base costs. Expected price increases over the project period amount to 17% of total base costs plus physical contingencies. Price increases for foreign costs were estimated at 8% for 1985 and 9% for 1986-88. Government efforts to curtail inflation are likely to hold local inflation somewhat below these levels and price increases for local costs were estimated at 2.5% for 1985 and 5.5% for 1986-88. For the calculation of price contingencies, it is assumed that exchange rate adjustments will, on the average, maintain "purchasing power parity" during the project implementation period.

Financing Plan

40. The proposed Bank loan of $95.0 million would finance 39.5% of total project costs excluding taxes, or 35.7% of the gross costs of $266.3 million, including interest during construction. Government equity would finance $171.3 million (64%). The front-end fee would be capitalized. The financing plan was reviewed during loan negotiations and Government contributions were confirmed. On project completion, all project assets and debt service liabilities would be transferred to ISWACO (Section 3.07 of the draft Loan Agreement).

41. Procurement and Disbursement. All civil works and equipment for the project, estimated at about $142 million and $92 million respectively, will be procured through ICB following Bank guidelines. However, a provision has been made that urgently needed goods, as agreed with the Bank, estimated to cost the equivalent of $0.25 million per contract, aggregating not more than $5.0 million equivalent, may be procured by local competitive bidding. The contract packaging for the project ensures efficient project implementation. Advance contracting has been included at the Government's risk given the urgency to start construction of the water intake during the 1984 dry season, and to avoid delay in project completion. The proceeds of the loan would be

disbursed against: (a) 40% of the total expenditures for civil works; (b) 100% of the foreign expenditures and 100% of ex-factory local expenditures for equipment and materials; and (c) 55% of the cost of consulting services. Disbursements under contracts for equipment and materials costing $100,000 equivalent or less each will be made on the basis of statements of expenditure. A Special Account of $1.5 million will be established to facilitate loan disbursements against eligible expenditures incurred. Given the advanced stage of project preparation, scheduling of construction and Government priority to complete the project before end-1988, disbursements of the proposed loan are expected to take 4.5 years, somewhat faster than the average time indicated by the country disbursement profile, but in line with the experience of the First Water Supply Project. The Closing Date would be December 31, 1989.

42. Financial Performance. ISWACO's main source of revenue is the sale of water to municipalities by its Water Division and of power to the Korea Electric Power Company (KEPCO) by its Dams Divisions. It also receives revenues from the sale, at cost, of industrial sites. Assurances were received at negotiations that both the Water Division and the Dams Division of ISWACO would raise sufficient revenues to cover the costs of operation, maintenance, administration, depreciation and taxes and also to provide a minimum rate of return on revalued assets of 4% in 1985 and 5% thereafter (Sections 4.03 and 4.04 of the draft Project Agreement). This rate of return would permit some 15% of ISWACO's huge investments to be financed from internal resources in the period 1985-88. To further protect the financial position of ISWACO, assurances were also received at negotiations that ISWACO would manage its debt position so as to ensure that its projected debt service coverage does not fall below 1.3 (Section 4.05 of the draft Project Agreement). It was further agreed that: i) ISWACO's future investment plans, including five-year projections would be furnished to the Bank every year; and ii) a financial monitoring system would be established for both the Water and Dams Divisions and that financial monitoring indicators would be furnished to the Bank semi-annually (Sections 4.06 and 4.07, respectively, of the draft Project Agreement).

43. The cash position of ISWACO is satisfactory but, in 1984, it is estimated that the rate of return on revalued assets for both the Water and the Dams Divisions was about 2.7%, thereby falling short of the 4% rate of return convenanted under the second water supply project (Loan 2350-KO). The shortfall reflects an adjustment problem during this first year. When the problem came to the attention of ISWACO, bulk water tariffs were raised by 10% which is sufficient to ensure that the Water Division will be in compliance with the rate of return covenant in 1985.

44. In the case of the Dams Division, the shortfall in the rate of return for 1984 was caused, in large measure, by an uncommonly large revaluation of assets which had doubled the value of assets in the previous year. In that context it was difficult to achieve a 4% rate of return on revalued assets even though bulk power tariffs were 72% above their 1982 levels. In 1985, however, a major new source of hydro-power (the Chungju dam) will come on stream and this is projected to increase the revenues of the Dams Division sufficiently to achieve the convenanted 4% rate of return on revalued assets in 1985. Beyond 1985, the tariff increases needed to maintain compliance with

the rate of return convenant are within the reasonable ability of the Government to implement.

45. The organization of ISWACO would also be strengthened through financial management studies. Assurances were obtained during negotiations that ISWACO would study and submit to the Bank, not later than December 31, 1986, ways to improve its financial management, consolidating its financial operations, presently dispersed under independent divisions, strengthening its financial and planning section, and improving its management reporting system (Section 2.05 of the draft Project Agreement).

46. Operation and Maintenance. ISWACO, which is already responsible for nine regional water supply systems, would own and operate the project works. Assurances were obtained during negotiations that suitable maintenance and inspection program for the overall regional systems would be sent by ISWACO for Bank review not later than December 31, 1986. ISWACO's proposal would include a description and schedule of the maintenance and inspection program with particular reference to prevention of corrosion and incrustations in the pipelines (Section 2.04 of the draft Project Agreement). The raw water system and transmission pipelines which represent 92% of projects costs would be operated by ISWACO. The cities of Incheon, Bucheon and Gwanymyeong would jointly operate their treatment plant, which would be financed by these cities and the Asian Development Bank (ADB). The organization for the joint operation of this plant is being studies by consultants under a technical assistance grant from ADB. The Government is studying the benefits of ISWACO or the municipalities operating the other two treatment plants included in the project. After project completion, the corresponding assets and liabilities (including the corresponding portion of the Bank loan) would be transferred to ISWACO or the respective municipalities. Assurances were obtained that a Transfer and Operations Agreement, a draft of which would be presented to the Bank for comments by December 31, 1987, would be signed with ISWACO prior to completion of the project (Sections 2.02 of the draft Project Agreement and 3.07 of the draft Loan Agreement).

47. Accounts and Audit. MOC's accounting procedures and systems are satisfactory. ISWACO's 1982 and 1983 financial statements have been satisfactorily audited. Assurances were obtained that within six months from the end of each fiscal year (a) MOC would submit the project cost accounts, as audited by independent auditors acceptable to the Bank (Section 4.02 of the draft Loan Agreement); and (b) ISWACO would submit their financial statements, audited by independent auditors acceptable to the Bank (Section 4.02 of the draft Project Agreement).

48. Justification and Benefits. The proposed project meets urgent needs for water for 25 municipalities in the Metropolitan Region. The project gives emphasis to the application of sound financial policies, which are expected to increase efficiency in the allocation and use of water resources. The project also provides for institutional development in financial, tariff and organizational areas. These components are expected to have a large impact and may eventually lead to the establishment of a regional water authority in the metropolitan area, which would improve operating efficiency over the presently fragmented system.

49. Upon completion of the project, 5 million persons in 25 municipalities would have an improved water supply, be free of rationing and low water pressures, and would be able to increase their usage of water for residential, commercial and industrial purposes. After completion of the municipalities' distribution networks, the project would make water available to 1.1 million additional persons by 1991 and 2.3 million persons by 1996. It is estimated that about 26% of the incremental population to be served with water are below the relative urban poverty threshold. This would mean that by 1991 the number of poor with house connections would more than double. Since most of the urban poor now are either unserved, or have less reliable or less convenient service (standpipes, low pressure, water rationing, etc.) they would be benefitted by the expansion of water supply, the improvement of service and the increase in house connections from 77% in 1983 to 87% by 1988 and 92% by 1991, with practically everybody having house connections in the main project cities. Financial projections for a sample of the beneficiary municipalities show that no major tariff increases are expected at the consumer level as a result of the project. Water charges are affordable to the whole population. This is because tariffs are progressive, with large residential consumption charged up to six times the minimum rate. Water charges for a minimum consumption of 10 to 15 tons per family is W600 per month ($0.75), representing less than 1% of the monthly household income of the lowest percentile.

50. The Economic Rate of Return (ERR) for the project, based on existing water tariffs, and the total cost of providing water for the households served by the project, is estimated at 14%. Sensitivity analysis shows that a 10% increase in the investment cost, or a two year delay in completing the project would reduce the ERR to 13%, and that the ERR would be 11% even if the investment and operational expenses are increased by 15%. The Project would, for the first time, provide water to extensive areas within the Metropolitan Region, allowing residential, industrial and commercial development. The ERR, including the project benefits expected to be reflected in real estate values, is estimated at 19%. The internal rate of return, based on ISWACO's charges for treated water to the municipalities is 10%, indicating that bulk water tariffs are somewhat lower than the marginal cost of water. These rates of return underestimate the economic benefits of the project, since they are based on the average charges for treated water, which only partially represent the consumer willingness to pay for water (as evidenced by excess consumption charges up to three times higher than the average tariff). Furthermore, these rates of return also exclude other important benefits which are difficult to quantify, like the provision of better service to present consumers and the improvement of living standards and the health and general welfare of the population. The water provided by the project is the only source for most municipalities and is therefore essential for the Region's development.

51. Project Risk. There are no special risks in the project. The Government has given assurances that it will furnish sufficient and timely counterpart funding. There is a risk that complementary works could suffer some delays although the Government has provided assurances that the beneficiary cities will complete these works by December 31, 1988.

52. Environmental Aspects. The project serves the main urban conurbation in Korea and would improve the environment and living conditions of this population. Since about 92% of the population is served satisfactorily by septic tanks and nightsoil disposal systems, combined waste and storm water drains and garbage collection and disposal services, pollution of the neighborhood environments would be avoided. Government is also concurrently implementing satisfactory programs for sewerage and sewage treatment, and night soil treatment, and pollution control, based on an Environmental Master Plan Study of the Han River Basin, completed by consultants in 1984. Sewer interceptors being constructed under the Han River Development Project will contribute to reducing the pollution of the main water courses. OOE has also started programs to control industrial waste pollution of the waterways and atmosphere by establishment of effluent and emission standards and monitoring systems. All these measures will result in a gradual improvement of the project area environmental conditions and ensure that the additional wastewater resulting from the project would not result in environmental deterioration.

PART V - LEGAL INSTRUMENTS AND AUTHORITY

53. The draft Loan Agreement between the Republic of Korea and the Bank, the draft Project Agreement between the Bank and ISWACO, and the Report of the Committee provided for in Article III, Section 4 (iii) of the Articles of Agreement are being distributed separately to the Executive Directors. Special conditions of the project are listed in Section III of Annex III.

54. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Bank.

PART VI - RECOMMENDATION

55. I recommend that the Executive Directors approve the proposed loan.

A.W. Clausen
President

Attachment

January 14, 1985
Washington, D.C.

TABLE 3A

PAGE 1

KOREA, REPUBLIC OF - SOCIAL INDICATORS DATA SHEET

	KOREA, REPUBLIC OF			REFERENCE GROUPS (WEIGHTED AVERAGES) /a	
				(MOST RECENT ESTIMATE) /b	
	1960/b	1970/b	MOST RECENT ESTIMATE/b	MIDDLE INCOME ASIA & PACIFIC	MIDDLE INCOME LAT. AMERICA & CAR
AREA (THOUSAND SQ. KM)					
TOTAL	98.5	98.5	98.5	.	.
AGRICULTURAL	20.4	23.2	22.4	.	.
GNP PER CAPITA (US$)	180.0	430.0	1910.0	1091.2	2108.6
ENERGY CONSUMPTION PER CAPITA					
(KILOGRAMS OF OIL EQUIVALENT)	143.0	493.0	1104.0	567.3	995.5
POPULATION AND VITAL STATISTICS					
POPULATION,MID-YEAR (THOUSANDS)	25003.0	32241.0	39336.0	.	.
URBAN POPULATION (% OF TOTAL)	27.7	41.1	61.3	34.7	66.5
POPULATION PROJECTIONS					
POPULATION IN YEAR 2000 (MILL)			50.5	.	.
STATIONARY POPULATION (MILL)			70.2	.	.
POPULATION MOMENTUM			1.7	.	.
POPULATION DENSITY					
PER SQ. KM.	253.9	327.4	393.2	261.9	35.7
PER SQ. KM. AGRI. LAND	1223.2	1387.3	1730.3	1735.1	92.4
POPULATION AGE STRUCTURE (%)					
0-14 YRS	42.9	42.1	33.1	39.0	39.9
15-64 YRS	53.7	54.6	62.8	57.6	56.0
65 AND ABOVE	3.3	3.3	4.1	3.3	4.1
POPULATION GROWTH RATE (%)					
TOTAL	2.1	2.5	1.7	2.3	2.4
URBAN	4.7	6.7	5.1	4.3	3.6
CRUDE BIRTH RATE (PER THOUS)	42.6	30.4	22.8	30.1	31.3
CRUDE DEATH RATE (PER THOUS)	13.7	9.6	6.4	9.5	8.1
GROSS REPRODUCTION RATE	2.8	2.1	1.5	2.0	2.0
FAMILY PLANNING					
ACCEPTORS, ANNUAL (THOUS)	..	671.0	686.0 /c	.	.
USERS (% OF MARRIED WOMEN)	..	25.0	54.0	52.7	40.3
FOOD AND NUTRITION					
INDEX OF FOOD PROD. PER CAPITA (1969-71=100)	89.0	99.0	125.0	123.0	116.3
PER CAPITA SUPPLY OF					
CALORIES (% OF REQUIREMENTS)	98.0	109.0	126.0	114.4	110.6
PROTEINS (GRAMS PER DAY)	57.0	64.0	74.0	57.0	67.3
OF WHICH ANIMAL AND PULSE	7.0	8.0	14.0 /d	14.1	34.1
CHILD (AGES 1-4) DEATH RATE	8.6	4.0	1.9	7.2	5.7
HEALTH					
LIFE EXPECT. AT BIRTH (YEARS)	53.9	59.1	67.3	60.4	64.7
INFANT MORT. RATE (PER THOUS)	78.3	50.1	32.0	66.3	60.6
ACCESS TO SAFE WATER (%POP)					
TOTAL	12.1	58.0	71.0 /e	37.0	65.4
URBAN	18.6	84.0	85.0 /e	54.8	78.1
RURAL	9.5	38.0	54.9 /e	26.4	46.2
ACCESS TO EXCRETA DISPOSAL (% OF POPULATION)					
TOTAL	..	25.0	64.0 /e	41.3	52.9
URBAN	..	59.0	80.0 /e	47.4	67.0
RURAL	..	..	50.0 /e	33.3	24.5
POPULATION PER PHYSICIAN	3540.0	2240.0	1440.0	7749.4	1917.7
POP. PER NURSING PERSON	3240.0 /f,g	1790.0 /g	350.0	2460.4	815.8
POP. PER HOSPITAL BED					
TOTAL	2510.0	1950.0	640.0 /h	1144.2	367.2
URBAN	1280.0 /f	1100.0	750.0 /i	651.2	411.5
RURAL	..	..	..	2594.6	2636.3
ADMISSIONS PER HOSPITAL BED	..	14.9	..	27.0	27.3
HOUSING					
AVERAGE SIZE OF HOUSEHOLD					
TOTAL	5.6	5.2	4.5	..	..
URBAN	5.4	4.9	4.4	..	..
RURAL	5.6	5.5	4.7	..	..
AVERAGE NO. OF PERSONS/ROOM					
TOTAL	2.5	2.3	2.0 /c	..	..
URBAN	2.8	2.7	2.1 /c	..	..
RURAL	2.4	2.2	2.0 /c	..	..
ACCESS TO ELECT. (% OF DWELLINGS)					
TOTAL	28.4	49.9	..	..	..
URBAN	67.3	92.4	..	..	..
RURAL	12.4	29.9	64.9 /d	..	..

TABLE 3A

KOREA, REPUBLIC OF - SOCIAL INDICATORS DATA SHEET

	KOREA, REPUBLIC OF		REFERENCE GROUPS (WEIGHTED AVERAGES) /a (MOST RECENT ESTIMATE) /b		
	1960/b	1970/b	MOST RECENT ESTIMATE/b	MIDDLE INCOME ASIA & PACIFIC	MIDDLE INCOME LAT. AMERICA & CAR
EDUCATION					
ADJUSTED ENROLLMENT RATIOS					
PRIMARY: TOTAL	94.0	103.0	107.0	102.0	105.4
MALE	99.0	104.0	108.0	105.9	106.3
FEMALE	89.0	103.0	105.0	98.2	104.5
SECONDARY: TOTAL	27.0	42.0	85.0	46.0	43.2
MALE	38.0	50.0	89.0	48.7	42.3
FEMALE	14.0	32.0	80.0	43.1	44.5
VOCATIONAL (% OF SECONDARY)	14.2	14.3	18.6	17.3	33.6
PUPIL-TEACHER RATIO					
PRIMARY	58.0	57.0	46.0	31.8	30.1
SECONDARY	34.0	37.0	39.0	23.5	16.8
ADULT LITERACY RATE (%)	70.6	87.6	96.0	72.9	79.5
CONSUMPTION					
PASSENGER CARS/THOUSAND POP	0.5	1.9	6.5	10.1	46.0
RADIO RECEIVERS/THOUSAND POP	31.2	124.4	393.5	113.6	225.6
TV RECEIVERS/THOUSAND POP	0.3	13.0	164.7	30.1	107.2
NEWSPAPER ("DAILY GENERAL INTEREST") CIRCULATION PER THOUSAND POPULATION	46.2	136.3	173.1 /a	53.9	63.5
CINEMA ANNUAL ATTENDANCE/CAPITA	4.1	5.2	1.7 /c	3.4	2.8
LABOR FORCE					
TOTAL LABOR FORCE (THOUS)	8304.0	11285.0	15414.0	.	.
FEMALE (PERCENT)	26.1	32.7	32.5	33.5	23.2
AGRICULTURE (PERCENT)	66.0	50.0	34.0	52.2	31.5
INDUSTRY (PERCENT)	9.0	17.0	29.0	17.9	23.9
PARTICIPATION RATE (PERCENT)					
TOTAL	33.2	35.0	39.2	38.7	32.2
MALE	48.3	46.8	52.4	50.9	49.3
FEMALE	17.2	23.0	25.7	26.6	15.2
ECONOMIC DEPENDENCY RATIO	1.4	1.3	0.9	1.1	1.4
INCOME DISTRIBUTION					
PERCENT OF PRIVATE INCOME RECEIVED BY					
HIGHEST 5% OF HOUSEHOLDS	..	17.1	16.1 /i	22.2	..
HIGHEST 20% OF HOUSEHOLDS	..	44.5	45.3 /i	48.0	..
LOWEST 20% OF HOUSEHOLDS	..	7.1	5.7 /i	6.4	..
LOWEST 40% OF HOUSEHOLDS	..	17.7	16.9 /i	15.5	..
POVERTY TARGET GROUPS					
ESTIMATED ABSOLUTE POVERTY INCOME LEVEL (US$ PER CAPITA)					
URBAN	..	..	320.0 /h	188.6	288.2
RURAL	..	..	270.0 /h	152.0	184.0
ESTIMATED RELATIVE POVERTY INCOME LEVEL (US$ PER CAPITA)					
URBAN	..	..	370.0 /h	177.9	522.8
RURAL	..	..	310.0 /h	164.6	372.4
ESTIMATED POP. BELOW ABSOLUTE POVERTY INCOME LEVEL (%)					
URBAN	..	..	18.0 /h	23.4	..
RURAL	..	..	11.0 /h	37.7	..

.. NOT AVAILABLE
. NOT APPLICABLE

NOTES

/a The group averages for each indicator are population-weighted arithmetic means. Coverage of countries among the indicators depends on availability of data and is not uniform.

/b Unless otherwise noted, "Data for 1960" refer to any year between 1959 and 1961; "Data for 1970" between 1969 and 1971; and data for "Most Recent Estimate" between 1980 and 1982.

/c 1975; /d 1977; /e 1979; /f 1962; /g Registered, not all practicing in the country; /h 1978; /i 1976.

DEFINITIONS OF SOCIAL INDICATORS

Notes: Although the data are drawn from sources generally judged the most authoritative and reliable, it should also be noted that they may not be internationally comparable because of the lack of standardized definitions and concepts used by different countries in collecting the data. The data are, nonetheless, useful to describe orders of magnitude, indicate trends, and characterize certain major differences between countries.

The reference groups are (1) the same country group of the subject country and (2) a country group with somewhat higher average income than the country group of the subject country (except for "High Income Oil Exporters" group where "Middle Income North Africa and Middle East" is chosen because of stronger socio-cultural affinities). In the reference group data the averages are population weighted arithmetic means for each indicator and shown only when majority of the countries in a group has data for that indicator. Since the coverage of countries among the indicators depends on the availability of data and is not uniform, caution must be exercised in relating averages of one indicator to another. These averages are only useful in comparing the value of one indicator at a time among the country and

AREA (thousand sq.km.)
Total - Total surface area comprising land area and inland waters; 1960, 1970 and 1981 data.
Agricultural - Estimate of agricultural area used temporarily or permanently for crops, pastures, market and kitchen gardens or to lie fallow; 1960, 1970 and 1981 data.

GNP PER CAPITA (1980 $) - GNP per capita estimates at current market prices, calculated by same conversion method as World Bank Atlas (1980-82 basis); 1960, 1970, and 1982 data.

ENERGY CONSUMPTION PER CAPITA - Annual apparent consumption of commercial primary energy (coal and lignite, petroleum, natural gas and hydro-, nuclear and geothermal electricity) in kilograms of oil equivalence per capita; 1960, 1970, and 1981 data.

POPULATION AND VITAL STATISTICS
Total Population, Mid-year (thousands) - As of July 1; 1960, 1970, and 1982 data.
Urban Population (percent of total) - Ratio of urban to total population; different definitions of urban areas may affect comparability of data among countries; 1960, 1970, and 1982 data.
Population Projections
Population in year 2000 - Current population projections are based on 1980 total population by age and sex and their mortality and fertility rates. Projection parameters for mortality rates comprise of three levels assuming life expectancy at birth increasing with country's per capita income level, and female life expectancy stabilizing at 77.5 years. The parameters for fertility rate also have three levels assuming decline in fertility according to income level and past family planning performance. Each country is then assigned one of these nine combinations of mortality and fertility trends for projection purposes.
Stationary population - Is one in which age- and sex-specific mortality rates have not changed over a long period, while age-specific fertility rates have simultaneously remained at replacement level (net reproduction rate=1). In such a population, the birth rate is constant and equal to the death rate, the age structure is also constant, and the growth rate is zero. The stationary population size was estimated on the basis of the projected characteristics of the population in the year 2000, and the rate of decline of fertility rate to replacement level.
Population Momentum - Is the tendency for population growth to continue beyond the time that replacement-level fertility has been achieved; that is, even after the net reproduction rate has reached unity. The momentum of a population in the year t is measured as a ratio of the ultimate stationary population to the population in the year t, given the assumption that fertility remains at replacement level from year t onward, 1981 data.
Population density
Per sq. km. - Mid-year population per square kilometer (100 hectares) of total area; 1960, 1970, and 1981 data.
Per sq. km. agricultural land - Computed as above for agricultural land only; 1960, 1970 and 1981 data.
Population Age Structure (percent) - Children (0-14 years), working-age (15-64 years), and retired (65 years and over) as percentage of mid-year population; 1960, 1970, and 1982 data.
Population Growth Rate (percent) - total - Annual growth rates of total mid-year population for 1950-60, 1960-70, and 1970-82.
Population Growth Rate (percent) - urban - Annual growth rates of urban populations for 1950-60, 1960-70, and 1970-82.
Crude Birth Rate (per thousand) - Annual live births per thousand of mid-year population; 1960, 1970, and 1982 data.
Crude Death Rate (per thousand) - Annual deaths per thousand of mid-year population; 1960, 1970, and 1982 data.
Gross Reproduction Rate - Average number of daughters a woman will bear in her normal reproductive period if she experiences present age-specific fertility rates; usually five-year averages ending in 1960, 1970, and 1982.
Family Planning - Acceptors, Annual (thousands) - Annual number of acceptors of birth-control devices under auspices of national family planning programs.
Family Planning - Users (percent of married women) - Percentage of married women of child-bearing age who are practicing or whose husbands are practicing any form of contraception to all married women. Women of child-bearing age are generally women aged 15-44, although for some countries contraceptive usage is measured for other age groups.

FOOD AND NUTRITION
Index of Food Production per Capita (1969-71=100) - Index of per capita annual production of all food commodities. Production excludes seed and feed and is on calendar year basis. Commodities cover primary goods (e.g. sugarcane instead of sugar) which are edible and contain nutrients (e.g. coffee and tea are excluded). Aggregate production of each country is based on national average producer price weights; 1961-65, 1970, and 1982 data.
Per capita supply of calories (percent of requirements) - Computed from energy equivalent of net food supplies available in country per capita per day. Available supplies comprise domestic production, imports less exports, and changes in stock. Net supplies exclude animal feed, seeds, quantities used in food processing, and losses in distribution. Requirements were estimated by FAO based on physiological needs for normal activity and health considering environmental temperature, body weights, age and sex distribution of population, and allowing 10 percent for waste at household level; 1961-65, 1970 and 1980 data.
Per capita supply of protein (grams per day) - Protein content of per capita net supply of food per day. Net supply of food is defined as above. Requirements for all countries established by USDA provide for minimum allowance of 60 grams of total protein per day and 20 grams of animal and pulse protein, of which 10 grams should be animal protein. These standards are lower than those of 75 grams of total protein and 23 grams of animal protein as an average for the world, proposed by FAO in the Third World Food Survey; 1961-65, 1970 and 1980 data.
Per Capita protein supply from animal and pulse - Protein supply of food derived from animals and pulses in grams per day; 1961-65, 1970 and 1977 data.
Child (ages 1-4) Death Rate (per thousand) - Annual deaths per thousand in age group 1-4 years, of children in this age group; for most developing countries data derived from life tables; 1960, 1970 and 1981 data.

HEALTH
Life Expectancy at Birth (years) - Average number of years of life remaining at birth; 1960, 1970 and 1982 data.
Infant Mortality Rate (per thousand) - Annual deaths of infants under one year of age per thousand live births; 1960, 1970 and 1981 data.
Access to Safe Water (percent of population) - total, urban and rural - Number of people (total, urban, and rural) with reasonable access to safe water supply (includes treated surface waters or untreated but uncontaminated water such as that from protected boreholes, springs, and sanitary wells) as percentages of their respective populations. In an urban area a public fountain or standpost located not more than 200 meters from a house may be considered as being within reasonable access of that house. In rural areas reasonable access would imply that the household or members of the household do not have to spend a disproportionate part of the day in fetching the family's water needs.

Access to Excreta Disposal (percent of population) - total, urban, and rural - Number of people (total, urban, and rural) served by excreta disposal as percentages of their respective populations. Excreta disposal may include the collection and disposal, with or without treatment, of human excreta and waste-water by water-borne systems or the use of pit privies and similar installations.

Population per Physician - Population divided by number of practicing physicians qualified from a medical school at university level.
Population per Nursing Person - Population divided by number of practicing male and female graduate nurses, assistant nurses, practical nurses and nursing auxiliaries.
Population per Hospital Bed - total, urban, and rural - Population (total, urban, and rural) divided by their respective number of hospital beds available in public and private general and specialized hospital and rehabilitation centers. Hospitals are establishments permanently staffed by at least one physician. Establishments providing principally custodial care are not included. Rural hospitals, however, include health and medical centers not permanently staffed by a physician (but by a medical assistant, nurse, midwife, etc.) which offer in-patient accommodation and provide a limited range of medical facilities.
Admissions per Hospital Bed - Total number of admissions to or discharges from hospitals divided by the number of beds.

HOUSING
Average Size of Household (persons per household) - total, urban, and rural - A household consists of a group of individuals who share living quarters and their main meals. A boarder or lodger may or may not be included in the household for statistical purposes.
Average number of persons per room - total, urban, and rural average number of persons per room in all urban, and rural occupied conventional dwellings, respectively. Dwellings exclude non-permanent structures and unoccupied parts.
Access to Electricity (percent of dwellings) - total, urban, and rural - Conventional dwellings with electricity in living quarters as percentage of total, urban, and rural dwellings respectively.

EDUCATION
Adjusted Enrollment Ratios
Primary school - total, male and female - Gross total, male and female enrollment of all ages at the primary level as percentages of respective primary school-age populations; normally includes children aged 6-11 years but adjusted for different lengths of primary education; for countries with universal education enrollment may exceed 100 percent since some pupils are below or above the official school age.
Secondary school - total, male and female - Computed as above; secondary education requires at least four years of approved primary instruction; provides general, vocational, or teacher training instructions for pupils usually of 12 to 17 years of age; correspondence courses are generally excluded.
Vocational enrollment (percent of secondary) - Vocational institutions include technical, industrial, or other programs which operate independently or as departments of secondary institutions.
Pupil-teacher ratio - primary, and secondary - Total students enrolled in primary and secondary levels divided by numbers of teachers in the corresponding levels.
Adult literacy rate (percent) - Literate adults (able to read and write) as a percentage of total adult population aged 15 years and over.

CONSUMPTION
Passenger Cars (per thousand population) - Passenger cars comprise motor cars seating less than eight persons; excludes ambulances, hearses, and military vehicles.
Radio Receivers (per thousand population) - All types of receivers for radio broadcasts to general public per thousand of population; excludes unlicensed receivers in countries and in years when registration of radio sets was in effect; data for recent years may not be comparable since most countries abolished licensing.
TV Receivers (per thousand population) - TV receivers for broadcast to general public per thousand population; excludes unlicensed TV receivers in countries and in years when registration of TV sets was in effect.
Newspaper Circulation (per thousand population) - Shows the average circulation of "daily general interest newspaper," defined as a periodical publication devoted primarily to recording general news. It is considered to be "daily" if it appears at least four times a week.
Cinema Annual Attendance per Capita per Year - Based on the number of tickets sold during the year, including admissions to drive-in cinemas on mobile units.

LABOR FORCE
Total Labor Force (thousands) - Economically active persons, including armed forces and unemployed but excluding housewives, students, etc., covering population of all ages. Definitions in various countries are not comparable; 1960, 1970 and 1982 data.
Female (percent) - Female labor force as percentage of total labor force.
Agriculture (percent) - Labor force in farming, forestry, hunting and fishing as percentage of total labor force; 1960, 1970 and 1981 data
Industry (percent) - Labor force in mining, construction, manufacturing and electricity, water and gas as percentage of total labor force; 1960, 1970 and 1981 data.
Participation Rate (percent) - total, male, and female - Participation or activity rates are computed as total, male, and female labor force as percentages of total, male and female population of all ages respectively; 1960, 1970, and 1981 data. These are based on ILO's participation rates reflecting age-sex structure of the population, and long time trend. A few estimates are from national sources.
Economic Dependency Ratio - Ratio of population under 15 and 65 and over to the working age population (those aged 15-64).

INCOME DISTRIBUTION
Percentage of Pri-ate Income (both in cash and kind) - Received by richest 5 percent, richest 20 percent, poorest 20 percent, and poorest 40 percent of households.

POVERTY TARGET GROUPS
The following estimates are very approximate measures of poverty levels, and should be interpreted with considerable caution.
Estimated Absolute Poverty Income Level (US$ per capita) - urban and rural - Absolute poverty income level is that income level below which a minimal nutritionally adequate diet plus essential non-food requirements is not affordable.
Estimated Relative Poverty Income Level (US$ per capita) - urban and rural - Rural relative poverty income level is one-third of average per capita personal income of the country. Urban level is derived from the rural level with adjustment for higher cost of living in urban areas.
Estimated Population Below Absolute Poverty Income Level (percent) - urban and rural - Percent of population (urban and rural) who are "absolute poor."

Comparative Analysis and Data Division
Economic Analysis and Projections Department
June 1984

Population: 39,331 (mid-1982, thousands)
GNP Per Capita: US$1,679 (1982)

KOREA - ECONOMIC INDICATORS

Indicator	Amount (million US$ at current prices) 1982 /a	Annual growth rates (%) at constant prices — Actual 1978	1979	1980	1981	1982	Projected 1988
NATIONAL ACCOUNTS							
Gross domestic product	68,418	11.3	7.1	-3.5	7.1	5.3	7.5
Agriculture	11,185	-4.0	6.7	-22.0	22.0	3.8	4.0
Industry	26,747	20.8	8.4	-0.1	5.3	6.1	8.5
Services	30,486	11.0	6.0	-2.4	3.6	4.8	8.0
Consumption	51,487	11.0	7.4	-1.0	3.7	3.6	6.7
Gross investment	17,514	35.9	17.5	-24.4	5.0	0.1	7.5
Exports of GNFS	26,575	17.5	-3.6	9.9	17.2	4.6	9.5
Imports of GNFS	27,215	29.1	8.6	-7.7	8.5	-0.1	8.6
Gross national savings	14,531	14.1	3.7	-17.7	3.0	18.2	9.4
PRICES							
GDP deflator (1975 = 100)		164.6	197.4	246.7	286.2	309.1	464.1
Exchange rate (US$1 =)		484.0	484.0	607.6	681.0	731.1	
Export price index (1975 = 100)		135.4	161.8	170.3	174.5	167.1	238.7
Import price index (1975 = 100)		105.8	129.2	163.9	171.7	158.4	233.3
Terms of trade index (1975 = 100)		128.0	125.2	103.9	101.6	105.5	102.3

	Share of GDP at market prices (%) (at current prices) 1960	1970	1975	1980	1985	1990	Average annual increase (%) (at constant prices) 1960-70	1970-75	1975-80	1980-85	1985-90
Gross domestic product	100.0	100.0	100.0	100.0	100.0	100.0	8.6	9.8	8.2	7.0	7.5
Agriculture	36.7	26.9	24.5	16.5	15.9	12.4	4.3	4.9	-1.2	7.3	4.0
Industry	20.1	29.5	33.8	41.3	44.4	49.2	17.4	15.3	13.5	8.5	8.4
Services	43.2	43.6	41.7	42.3	39.7	38.3	8.1	7.7	7.6	6.7	7.7
Consumption	85.3	83.0	80.1	76.4	65.7	58.1	6.7	7.8	7.1	5.7	7.0
Gross investment	11.0	26.9	29.0	30.2	33.2	33.8	23.6	11.2	14.6	6.0	7.5
Exports of GNFS	3.4	14.3	27.6	35.7	43.7	49.6	29.3	25.4	16.1	9.8	9.5
Imports of GNFS	12.8	24.1	36.3	42.7	42.6	43.9	20.2	15.8	17.0	6.8	8.9
Gross national savings	8.0	19.5	20.6	21.7	-	-	17.2	14.6	9.0	12.7	9.2

PUBLIC FINANCE	As % of GDP 1960	1970	1975	1980
Current revenues	18.5	17.8	17.9	19.9
Current expenditures	14.3	13.1	15.4	15.6
Current surplus	4.2	4.7	2.5	4.3
Capital expenditure	3.4	6.4	6.4	5.9
Foreign financing	...	1.0	1.3	1.0

Labor Force in 1980	Millions	(%)
Agriculture	4.7	32.2
Industry	3.9	27.1
Services	5.1	35.5
Unemployed	0.7	5.2
Total Labor Force	14.5	100.0

OTHER INDICATORS	1960-70	1970-75	1975-80	1980-85	1985-90
Annual GNP growth rate (%)	8.7	9.0	7.9	7.0	7.6
Annual GNP per capita growth rate (%)	5.9	6.9	5.2	5.5	6.1
Annual energy consumption growth rate (%)	14.2	9.6	8.7	5.7	6.0
ICOR	1.9	2.7	5.4	4.2	4.2
Marginal savings rate	0.3	0.3	0.3	0.3	0.3
Import elasticity	2.2	1.6	2.0	1.2	1.2

East Asia and Pacific Regional Office
February 1984

Population: 39,331 (mid-1982, thousands)
GNP Per Capita: US$1,679 (1982)

KOREA - BALANCE OF PAYMENTS, EXTERNAL CAPITAL AND DEBT
(million US$ at current prices)

Indicator	Actual							Projected
	1970	1975	1978	1979	1980	1981	1982	1988
BALANCE OF PAYMENTS								
Exports of goods and services	1,379	5,909	17,124	19,523	22,587	27,552	28,500	70,972
Of which: merchandise f.o.b.	882	5,028	12,678	14,694	17,220	20,938	20,961	52,145
Imports of goods and services	2,180	7,992	18,651	24,115	28,360	32,476	31,500	74,003
Of which: merchandise f.o.b.	1,804	6,671	14,436	19,266	21,604	24,337	23,361	58,616
Net transfers	178	225	467	439	449	506	473	500
Current account balance	-623	-1,858	-1,060	-4,153	-5,325	-4,418	-2,546	-2,531
(% of GNP)	(-7.2)	(-9.2)	(-2.2)	(-7.1)	(-9.3)	(-7.4)	(-3.9)	(-1.6)
Direct investment	66	53	61	17	-5	59	100	250
MLT loans (net)	242	1,252	2,216	2,945	2,096	4,267	2,051	2,294
official	147	486	663	852	689	1,337	880	635
Private	95	765	1,552	2,093	1,408	2,929	1,171	1,659
Other capital (incl. errors & omissions)	372	929	-510	2,090	3,770	367	484	1,643
Change in reserves	-57	-376	-407	-898	-536	-275	-98	-1,657
International reserves (gross)	606	2,012	5,405	6,303	6,839	7,114	7,212	14,387
Reserves as months imports	3.3	3.0	3.5	3.1	2.9	2.6	2.7	2.3
EXTERNAL CAPITAL AND DEBT								
Gross disbursements								
Official grants	-	-	-	-	-	-	50	
Concessional loans	123	123	184	193	138	159	148	
DAC	122	108	167	173	121	158	148	
OPEC	-	-	13	20	17	1	-	
IDA	1	14	3	-	-	-	-	
Other	-	1	-	-	-	-	-	
Non-concessional loans	317	1,511	3,729	4,448	3,655	4,779	3,937	
Official export credits	18	151	219	341	606	844	552	
IBRD	7	187	321	426	254	306	438	
Other multilateral	5	87	89	91	90	104	116	
Private	287	1,083	3,101	3,591	2,705	3,525	2,851	
Medium- and Long-Term Debt								
Debt outstanding and disbursed	1,797	5,540	11,937	14,553	16,274	19,964	22,006	
Official	613	2,657	5,016	5,667	6,498	7,702	8,572	
Private	1,185	2,883	6,921	8,886	9,776	12,263	13,433	
undisbursed	902	1,679	6,294	5,337	7,072	5,996	5,324	
Debt Service on MLT Loans								
Total service payments	268	667	1,825	2,578	2,762	3,597	4,199	
Interest	70	283	657	890	1,310	1,777	2,164	
Payments as % exports	19.4	11.3	10.7	13.2	12.2	13.0	14.5	
Short-Term Debt								
Debt outstanding and disbursed	...	2,409	3,575	6,279	10,047	13,658	14,100	
Interest payments	...	...	236	377	907	1,810	1,528	
Interest as % exports	...	...	1.4	1.9	4.0	6.7	5.3	
Average Interest Rate on New Loans (%)								
Official	4.5	7.9	7.4	7.6	7.5	8.4	8.0	
Private	7.1	9.3	9.7	11.4	14.0	13.6	13.7	
Average Maturity of New Loans (years)								
Official	28.0	19.3	19.6	16.8	19.6	15.3	15.5	
Private	10.9	5.7	10.9	10.7	11.2	13.1	8.1	

	As % of debt outstanding at end of most recent year (1982)
Maturity structure of debt outstanding	
Maturities due within 5 years	61
Maturities due within 10 years	103
Interest structure of debt outstanding	
Interest due within first year	9

East Asia and Pacific Regional Office
February 1984

KOREA

THE STATUS OF BANK GROUP OPERATIONS IN THE REPUBLIC OF KOREA /a

A. Statement of Bank Loans and IDA Credits (as of September 30, 1984)

Loan or Credit Number	Calendar Year	Borrower	Purpose	Amount ($ million) (less cancellations) Bank	IW	IDA	Undisbursed
Forty-four loans and eight credits fully disbursed				2,640.78	40.00	115.58	
1319	1976	ADC	Irrigation	29.0			0.28
1364	1977	ADC	Irrigation	95.0			3.52
1503	1978	ADC	Agriculture/Irrigation	36.0			8.31
1530	1978	Republic of Korea	Rural Infrastructure II	95.0			0.34
1666	1979	ISWACO	Chungju Multipurpose	125.0			10.57
1676	1979	Republic of Korea	Electronics Technology	29.0			8.44
1758	1979	Republic of Korea	Second Gwangju Regional	65.0			15.86
1774	1979	Republic of Korea	Population I	30.0			21.44
1788	1979	Korea Electric Co.	Power	115.0			15.23
1800	1980	Republic of Korea	Education V	100.0			5.80
1836	1980	Republic of Korea	Railway VII	94.0			4.67
1851	1980	AFDC	Agriculture II	50.0			5.00
1932	1981	KLTCB VIII	Div. Finance Co.	90.0			5.02
1933	1981	KDB IV	Div. Finance Co.	100.0			0.16
1980	1981	Republic of Korea	Nat. Urban Land & Housing	75.3			22.38
2004	1871	SNUV IV	Dev. Finance Co.	60.0			8.02
2072	1982	Republic of Korea	Water Supply	90.0			37.47
2111	1982	Republic of Korea	Agricultural Marketing	31.3			10.78
2112	1982	KTDC	Technology Development	50.0			18.88
2144	1982	CNB	DFC	30.0			15.42
2215	1982	Republic of Korea	Machinery Industry	70.0			64.75
2216	1982	Republic of Korea	Nat. Urban Land and Housing	100.0			92.95
2228	1982	Republic of Korea	Provincial and County Roads	125.0			92.29
2267	1983	Republic of Korea	Coal and Cement Distribution	122.0			121.54
2309	1983	Republic of Korea	Industrial Finance	255.0			213.38
2350	1983	Republic of Korea	Second Water Supply	78.5			71.22
2388	1984	Republic of Korea	Jeonju Regional Development	60.0			59.85
2392	1984	Republic of Korea	Highway Sector	230.0			227.91
2427	1984	Republic of Korea	Education Sector	100.0			99.75
	Total			5,170.88	40.00	115.58	1,261.23
	of which has been repaid			716.19	2.92	6.58	
	Total now outstanding			4,454.69	37.08	109.00	
	Amount sold		8.83				
	of which has been repaid		8.83	-	-	-	
	Total now held by Bank and IDA (prior to exchange adjustment)			4,454.69	37.08	109.00	
	Total undisbursed			1,261.23	-	-	1,261.23

/a The status of the projects listed in Part A are described in a separate report on all Bank/IDA-financed projects in execution, which is updated twice yearly and circulated to the Executive Directors on April 30 and October 31.

B. Statement of IFC Investments (as of September 30, 1984)

Fiscal Year	Obligor	Types of Business	Amount ($ million) Loan	Equity	Total
1968	KDFC	Development Financing	-	0.7	0.7
1969	Honam Silk Co.	Textiles	1.4	0.3	1.7
1970	Atlas Paper	Pulp and paper	4.5	0.5	5.0/a
1971	Korea Investment Finance Corp.	Capital Market Development	-	0.7	0.7
1974	KDFC	Development Financing	-	0.4	0.4
1974	Korea Investment Finance Corp.	Capital Market Development	-	0.3	0.3
1975	Gold Star & Co. Ltd.	Electronic Products	16.0	1.3	17.3
1975	Korea Securities Finance Corp.	Capital Market Development	5.0	0.6	5.6
1975	Tong Yang Nylon Company, Ltd.	Synthetic Fibers	6.9	2.1	9.0
1975	Hae Un Dae Development Company Ltd.	Tourism	2.8	0.7	3.5
1976	Korea Investment Finance Corp.	Capital Market Development	-	0.4	0.4
1976	Chonju Paper Mfg. Co.	Paper	5.0	0.8	5.8
1976	Korea Zinc. Co. Ltd.	Zinc	15.0	4.0	19.0
1976	KDFC	Development Financing	17.8	-	17.8
1976	Gold Star & Co. Ltd.	Electronic Products	10.0	0.4	10.4
1977	Gold Star & Co. Ltd.	Electronic Products	-	0.2	0.2
1977	KDFC	Development Financing	-	0.3	0.3
1977	Korea Securities Finance Corp.	Capital Market	-	0.5	0.5
1977	Korea Development Leasing Corp.	Capital Market	15.0	0.4	15.4
1978	KDFC	Development Financing	-	1.1	1.1
1979	Gold Star & Co. Ltd.	Electronic Products	-	1.7	1.7
1979	KIFC	Capital Market	-	0.6	0.6
1979	Korea Development Leasing Corp		-	0.2	0.2
1979	Gold Star & Co. Ltd.	Electronic Products	-	1.5	1.5
1980/84	Gold Star & Co. Ltd.	Electronic Products	-	5.3	5.3
1980	Korea Investment Finance Corp.	Capital Market	-	0.6	0.6
1980/ 82/84	Korea Securities Finance Corp.		-	2.3	2.3
1980	KDFC	Development Financing	-	2.2	2.2
1981	Taihan Bulk Terminal Co. Ltd.	Grain Port Terminal	7.0	2.5	9.5
1982	KIFC	Capital Market	-	0.6	0.6
1982	K-TAC (Korea Technology Advancement Corp.)	Research & Development	-	0.6	0.6
1983	KDIC	Money & Capital Market	-	0.9	0.9
1984	Halla Cement	Cement Const. Material	4.4	3.9	8.3
1985	Korea Fund	Money & Capital Market	-	9.1	9.1
	Total gross commitment		110.8	47.7	158.5
	less cancellations, terminations repayment and sales		94.7	14.7	109.4
	Total commitments now held by IFC		16.1	33.0	49.1
	TOTAL undisbursed		4.4	3.9	8.3

/a Cancelled at the request of the Company.

KOREA

THIRD WATER SUPPLY PROJECT

Supplementary Data Sheet

Section I: Timetable of Key Events

(a)	Time taken by the country to prepare the project:	3 years
(b)	Project preparation agency:	MOC
(c)	Date of first presentation to Bank, and Bank consideration thereof:	February 1983
(d)	Date of departure of appraisal mission:	June 10, 1984
(e)	Date of completion of negotiations:	October 4, 1984
(f)	Planned date of effectiveness:	February 1985

Section II: Special Implementation Actions

None

Section III: Special Conditions

(i) studies of the bulk raw and treated tariffs would be presented to the Bank for review not later than June 30, 1986 (para. 27a);

(ii) a study to improve the organization, of water and sewerage services within the Metropolitan Region would be completed not later than December 31, 1986 (para. 27b);

(iii) Incheon and the other project municipalities in the Metropolitan Region would implement the specified complementary water works not later than December 31, 1988 (para. 35);

(iv) ISWACO's Water and Dam Divisions would obtain a rate of return, on revalued fixed assets in operation, of not less than 4% in 1985 and 5% thereafter (para. 42);

(v) ISWACO would carry out a study to strengthen its financial management and present it to the Bank to review not later than June 30, 1986 (para. 45);

(vi) a program for maintenance and inspection of the Metropolitan systems would be presented to the Bank for review before December 31, 1986 (para. 46); and

(vii) a draft Transfer and Operations Agreement would be presented to the Bank for review not later than June 30, 1987, and would be signed with ISWACO (para. 46).

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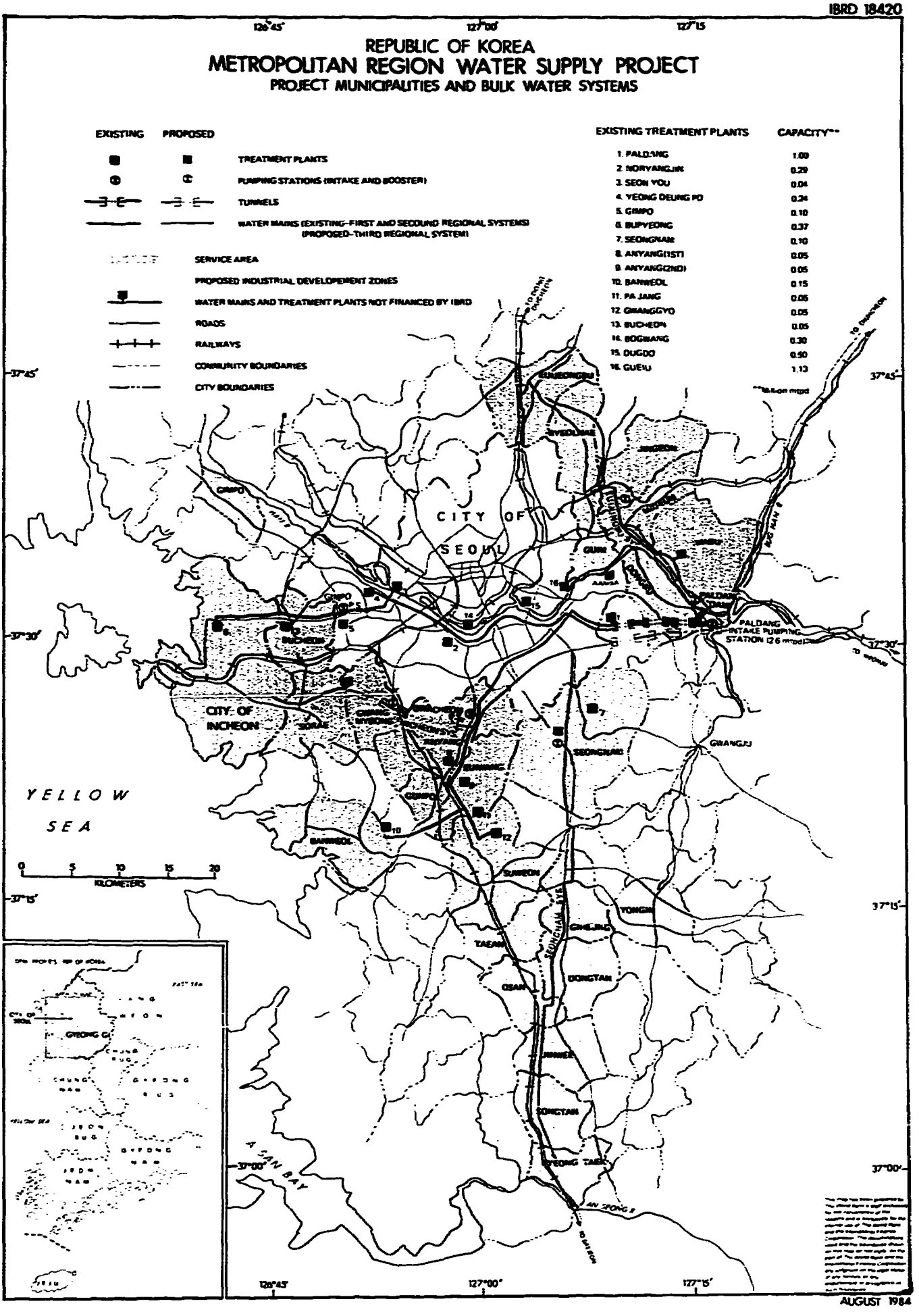
REPUBLIC OF KOREA
METROPOLITAN REGION WATER SUPPLY PROJECT
PROJECT MUNICIPALITIES AND BULK WATER SYSTEMS



AUGUST 1984